

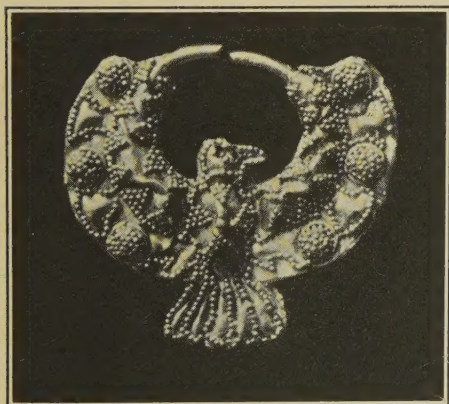
ANCIENT EGYPT

1932.

JUNE.

PART II.

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Editor of "Ancient Egypt,"

University College, Gower Street, London, W.C. 1.

MOHENJO-DARO.

THE magnificent work which Sir John Marshall has brought out is essential for any study of the origins of civilisation. The 716 pages and 164 plates give a first survey of the gains, and students of other cultures will have to take into their conception the Indus as equally original with the Nile and the Tigris. To enter on an analysis of the whole work is beyond our scope here, but at least some sense of its relation to the Egyptian methods and ideas must be given. This is the more needful as the high price, £10, will make copies scarce, but we owe our copy at University College to the generosity of our former student Ernest Mackay, who did much of the excavating and has written about a third of the volume.

The chapters deal with the land and climate, the site, the buildings, the portable antiquities, religion, burial, and the extent and age of the civilisation. Then follow accounts of the various buildings and architecture. The pottery, figurines, statuary, stone vessels, and seals each have a chapter. The seals are discussed from the Tigrian point of view. Special chapters are given to the household objects, metalwork, personal ornaments, games, shell and faience, weights, human remains, animals, minerals, and analyses.

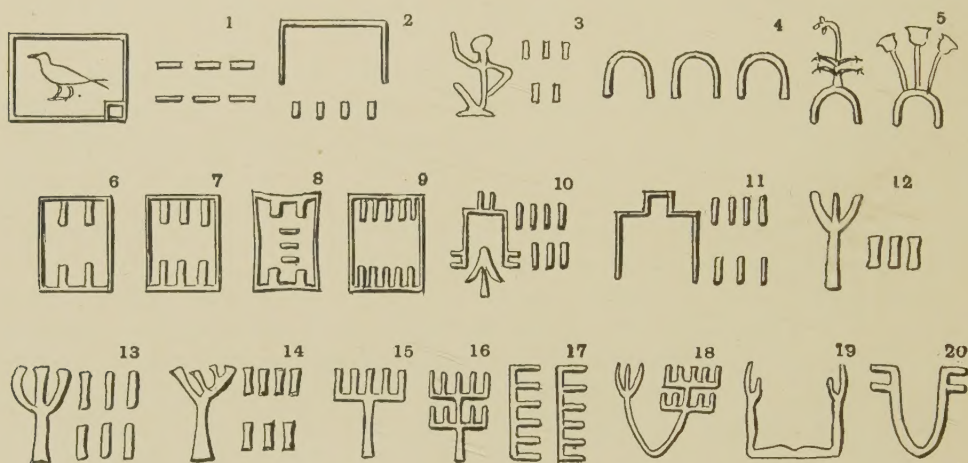
Of all this survey, the most surprising matter is the figure sculpture. The heads of steatite are markedly typical, but the figure of red stone from Harappa is astonishing in the exactness and observation of the muscular curves, and its true proportions. The dancing figures in grey stone and bronze are skilful in the transient pose, though not so perfectly expressed as the red statuette. Of less careful work there is a multitude of small pottery figures of animals, especially squirrel and monkey, and a bull is finely modelled. The faience vases are small, used probably for cosmetics.

The building is all in baked brick, which has retained its condition remarkably. No other country developed thus until Rome produced red bricks three thousand years later. In the painted pottery the designs are all in rectangular order, as in Egypt; no circle is divided into 6 as in Mesopotamia and Syria. A few pieces are in the Susa I style, with hugely horned ibex, and black on white basket patterns. Some rude pottery figures have many necklaces and button knobs freely used, like the XIth dynasty style. The copper axes are like those of the Ist dynasty, flat slabs without any projection to attach the lashing on to the handle. The beads are strung six rows deep, with spaced strips and semi-circular end pieces, exactly in the Egyptian style. Model chariots are found with both smooth and also knobbed wheels. Shell inlay was a favourite decoration, as it was with the Hyksos in Egypt. The profusion of weights shows that balances must have been in common use. The results connected with other systems must be examined at length: most of them agree with the Sumerian standard, also known as the gold weight of Egypt.

The most fascinating subject in this civilisation is the writing. Like most scripts it is based on pictures, and the ideographs are all that we can use to interpret it, in the absence of linguistic material. For this examination the best aid is by the similar method of ideographs in Egypt, as they retained longest

their original detail. In writing on clay, or reed, or wood, the difficulty of handling quickly leads to formations that conceal the original shape. The Indus script, being engraved on stone, escapes transformation, much as the Egyptian stone writing escaped; and the method of writing successive titles together seems to make Egypt a training ground. Over 1800 titles were lately classified, and delimited by their contacts, in *Ancient Egypt*, 1924, IV, to 1926, III. This Egyptian series is enlightening in its nature and methods, which supply parallels to what may be discerned on the Indus. In the following suggestions it would be merely distracting to assess in every case their uncertainty. Once for all let it be said, these are only suggestions, or speculations, and for "is," read "may possibly be," in all instances.

The first obvious feature is the recurrence of numbers of strokes, and the examples of these are placed in the forefront of all, in the "Sign Manual" of the publication. In Egypt there was (Fig. 1) "the great house of six lords,"



- (2) "the house of four," (3) "the five men," (4) "the council of thirty chiefs," (5) the sectional councils of ten of the south and ten of the north.

So on the Indus there was (6) a hall of four, (7) hall of six, (8) hall of seven, in a special form, or (10, 11) normal forms (9) hall of ten; no other numerals accompany this sign of a hall.

The system of naming offices by the number of officials is also familiar in Italy, as *duumviri*, *triumviri*, *quatuorviri*, *septemviri*, *decemviri*, and *quindecimviri*. In Cappadocia also the cuneiform tablets name boards of five officials, or of ten officials, as Mr. Sidney Smith informs me. This official habit is therefore very widely spread.

Where numbers are found with only one sign (as 12, 13, 14) they must be referred to a general board over a whole subject. Sometimes a number is set on a standard (15) of 4, 5, 6, 7, 8 or 10 officials (16). This seems to be the mark of a judge on circuit or travelling inspector, who set up the ensign of his office outside the court where acting. Probably this is the origin of the more compact sign (17) of 4, 5, 6, 7, 8 or 12 lines. The numbers are mostly those of courts already noted above.

Another form of this is a pair of arms (18) bearing strokes on a stand held on one arm; this is like the Egyptian *ka* (19) which indicates the active energy of the person. So here the arms (18) refer to action for the court of 10. This

symbol is seen also in the very common sign 20, at the end of a title, pointing to action for the office concerned ; this is best rendered here as *wakil* or agent.

A very frequent sign is the wheel with six spokes. Confirming the sense of this as a wheeled vehicle, it is copied from a brand-mark on the neck of a bullock (seal 91), obviously a draught-ox. There are two kinds of wheeled conveyance, those with one stroke (21, 22) and with two strokes (23), referring to chariots and to wagons. Further, there is (24, 25) the wagon with a tilt over it. The frequency of wheel signs shows how common the bullock cart and wagon were anciently, as now, in India. There is another variety, 26 and 27, to denote a solid wheel of wood.

The signs 12, 13, 14 are obviously a tree lopped of its branches ; from the frequency of these they refer to timber in general, and to two kinds endogenous,



or coniferous (12), and exogenous, or branching (14). The numbers with these in 12-14 would refer to different offices or courts, or perhaps different forests. Another kind of wheel (28, 29) may perhaps be interpreted by some construction still in use ; it is formalised for ease of engraving, and all signs are narrowed in order to pack closer on the seal.

The commonest group with the timber sign is 30 or 31. The square object is sometimes lined across, as in 32 ; this can hardly be other than a writing tablet with a handle, like some hornbooks. The group then read as "wakil of the registrar of timber" or forests.

The army is represented by infantry (33) and archery (34).

A dead animal, kid or lamb, is often figured hung up by the heels (35), meaning game or hunting. After it is usually sign 36, apparently not a weapon but a trap. Often 37 follows, but 36 is always with the animal, and not always with 37, so it must refer to the animal. No. 37 seems to be an official title, as in 38, "official of the registry of chariots," where it cannot be an object. Also 39, "wakil of the official trapper." No. 40 is a man bearing waterskins on a yoke, sometimes with branches over them to shade them (41) : the sense is "water supply."

We may now try to use the frequency of grouping as an indication. There are five very common signs much alike, 42 to 46, lettered here A, B, C, D, E. Of those, A, B or C are rarely placed together, and (as the differences are but slight) they represent small differences of function, seal 156. This sign A may occur alone with a numeral, it is therefore of higher rank than the signs otherwise qualified. It may well be taken as inspector or intendant. There are two other grades of inspector, D and E, which may occur together, or with the inspector sign. They may be D, assistant or sub-inspector (under control), and E, deputy (with full action). Thus the combined signs will make sense as AD, assistant inspector; AE, deputy inspector; DE, assistant deputy inspector. This at least suggests how such combinations of signs might occur.

Having gone so far, we may now review the remainder of the signs, of which there are five or more examples, for it is only by reviewing many instances of one sign that we may hope to find combinations which give a clue to the meaning.

The sign 47, of curved lines barred across, is joined to the man with water-skins (40, 41), pointing to water as the connection, and we take this as a canal with ripples on it. 48 seems plainly to be a bow, with a holder to prevent the bow-string cutting the hand. 49 is joined in 50 with the "registrar of wood." May it be the staff and wallet of a forester? 51 has the curious theta-like sign with the water supply, an official of water service: and the same in 52 is associated with the canal sign(47), branching. In 53 we may have a fork of a canal; with it is a similar sign (54), not barred, which may be a road, the seal belonging to a surveyor of roads and canals. 55 has a loop sign to begin, connected with trees, and the theta sign with the same bifurcate sign which accompanied it as indicating an official of water, showing a surveyor of wood and water. 56 is a row of hills, turned up for compactness of writing. In 57 a hilly land is shown, also turned up. 58 is mountainous land, and in 59 the last triangle is barred, indicating rocky stages. This sign in 60 has a sign on it, like the Egyptian sky sign, so this may refer to a very high mountain touching the sky. 61 is a very usual terminal sign: it may stand alone, so it refers to a person and not a thing. It is so common that it is a generic title, and not specific. It is usually associated with an inspectorate, but never has a wakil, so it is not for action, but for information and direction. It is associated with most of the courts, of 4, 5, 6, 7, and 12, so it is not of any one department. This seems as if it were a territorial dignity, a feudal chief who inspects for the State, but has no specific action. Probably a feudal knight is the nearest equivalent; if so, the addition of it to other definite functions would be parallel to the title of Sir. It has been proposed that this is a spear, and that would fit with a knight as the title.

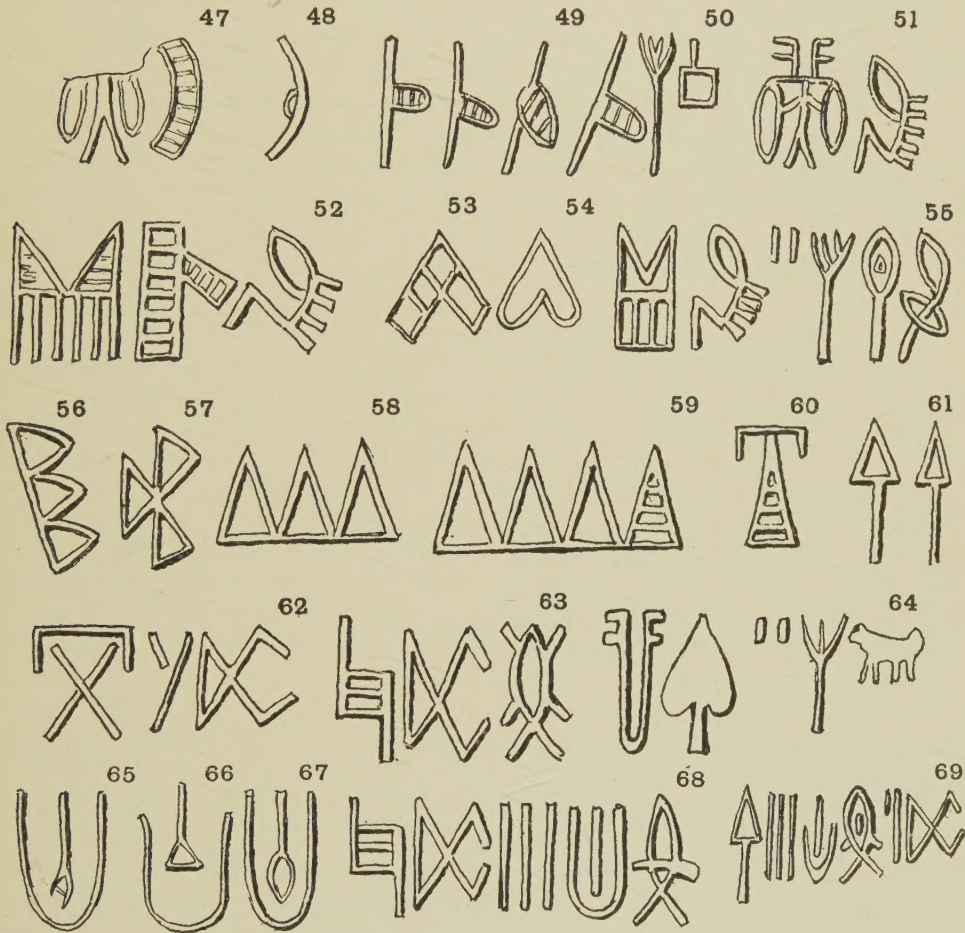
62 seems obviously a table, though folding stands of tables are not figured in India; the crab sign after it would then refer to commissariat. It occurs in 63 with a rectangular sign, which seems from this to refer to food. 64 is a wakil of animals, timber, and trees, forest products.

Thus out of some 56 signs which recur five times we have dealt with 41, of which a few are only general official designations.

We may now attempt to see what proportion of the whole can be read by the basis of sign-values which we have reached so far, with the number of the seal.

- 5 Wakil of roads.
- 10 Wakil of the wagon of official of the court of five for infantry.
- 12 Wakil of the official trapper. Wakil of the heavy wagon (solid wheel).
- 13 Same.
- 14 Wakil of the two wagons of the deputy inspector of the court of seven.

- 15 Office of archers (bundle of arrows).
 19 Wagon of the inspector of four, knight.
 21 Wakil of bows. Wakil of inspector of trapped game.
 24 Wakil of bows. Wakil of assistant inspector of infantry.
 25 Timber of the court of seven.
 29 Wakil of bows, forester of the court of three.
 34 Wakil of the court of seven.
 35 Commissary of wagons for timber of the court of six.



- 40 Wakil of the assistant inspector of registering timber.
 41 Wakil of bows, inspector of the court of three, knight.
 43 Official of canal and water supply.
 44 Wakil of sub-inspector of commissariat.
 45 Wagon of water supply.
 53 Deputy inspector of the wakil of the table (commissariat).
 57 Wagon of sub-inspector of wakil of the commissariat.
 58 Wakil of the officials of timber and water supply.
 69 Archer and forester.
 70 Third wakil of archers of the court of five.
 74 Wakil of the wagon for bows of the court of seven.

- 75 Inspector of the orchard food (fruit).
- 76 Wagon of the forestry board of four.
- 79 Wagon of second deputy inspector of court of twelve of water supply.
- 82 Wakil of wagon of second inspector of roads.
- 87 Board of four for wood of archery ; sub-deputy inspector ; wakil of sub-inspector of the official trapper.
- 88 Wagon and heavy wagon of deputy inspector, knight.
- 92 Wakil of wood for archery ; wakil of the office of five for bows.
- 93 Wakil of duck ponds.
- 96 Wagon of deputy inspector of commissariat.
- 97 Wakil of wagons of deputy inspector of the board of ten.
- 100 Wakil of official hunter.

Thus out of the first hundred there are 35 which read now with official titles, and these seem reasonable and fitted to the conditions.

The first consideration is the pictorial image, if that can be understood. After that, some result can be reached by statistic of repetitions of the commonest signs. Then the stage is reached of searching for some ideograph linked with a sign, indicating its purpose. Every instance is to be read through, to see if a supposed meaning will be applicable.

It may seem strange that, so far, no personal names appear to be indicated, but this is what we find in Egypt. The greater part of the seals of the early dynasties were purely official, and had no personal reference. During the Vth dynasty, probably, offices had become hereditary, and too much in personal holding for, in the VIth, Pepy I had a series of large official cylinder seals made for public use, not one of which has any name except that of the king.

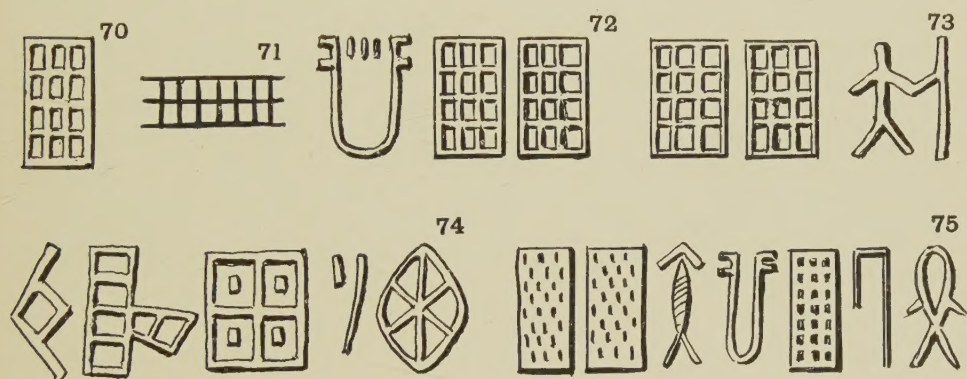
Some likely subjects have been looked for, but there is nothing so far to suggest weaving, building, or fire-drill. The Egyptian sealings likewise have no mention of such arts, because they did not enter in the class of official stores, for which the seals were intended. Here the wagon is prominent, probably because the seals were largely for transported goods, to show the destination of timber and military stores.

For further advance in reading, a practical knowledge of the country and of native Indian administration is necessary, to guide the insight on the meaning of signs. Analysis of the grouping of signs will carry us on general lines, as we can now break up the groups of titles, which were held simultaneously as in Egyptian bureaucracy.

There is one sign (65-67) which I hesitate to add to the readings above, because the parallel is so far-fetched that it would seem fantastic. It obviously appears to represent a cauldron and flesh hook in 65, or a spoon in 66, 67. This is reinforced in the group 68, where it is followed by the commissariat and food signs, and in 69 preceded by the commissariat sign. If we seek for a parallel, Joyce, in his *Social History of Ireland*, states that there were 313 public hostels in Ireland for free hospitality to travellers, and each great man was bound to keep open house in these, and had a large tract of land to pay the expenses of it, for the cauldron should never be taken off the fire. Every cauldron had a flesh fork for taking out pieces of meat ; and an offering to the king of Leinster in 598 A.D. was a flesh fork, a cauldron, a shield, and a sword, so important were the duties of public hospitality. This case and the parallels with Egypt are only quoted as showing what is naturally evolved by similar conditions, but not as implying any direct connections. The importance of the public host will accord with the titles in Fig. 69, ending with the territorial rank of knight. If

this parallel custom be, then, accepted, it would add this duty of hospitality to some seventy-five of the seals, so that it must have been one of the most general offices of seal-bearers. Why the sign is often followed by three strokes is not obvious. There may have been various grades of hostels, only the largest taking in man, beast, and wagon. Third grade was usual, but first, second, and fourth grades of service were known. The Khan and rest-house system seem, then, fully developed by 3,000 B.C. in the valley of the Indus.

Another sign which might be guessed is Fig. 70; it may represent plots of irrigated land, like the Egyptian sign for cultivated land, Fig. 71. The examples that help us are Fig. 72, "wakil of irrigated land"; Fig. 73, "measurer of irrigated land," with a measuring rod. In further connection is Fig. 74, "chariot of inspector of irrigation canals." This leads to explaining the second sign from the right in 75, the three sides of a rectangular figure, as "planning" or laying out, so 75 reads "wakil of inspector laying out irrigated land, sub-inspector of irrigated lands." The stroke and tick which come second from right end of 74 seem to imply an individual person rather than an office, *e.g.*, commissary, not commissariat.



We may now endeavour to read some more sealings.

- 18 Registrar of infantry hostel of the fourth (highest) grade.
- 23 Inspector of wagons of commissariat, wakil of official of canals.
- 30 Knight; over hostel of third grade and waterworks.
- 35 Commissariat wagons of the court of four for timber.
- 38 Court of six for infantry hostel.
- 42 Wakil of hostel for men, second grade, inspector of woods and canals.
- 46 Musician, knight of the court of five.
- 49 Deputy inspector of registry of mountain wagons, wakil of the wagon of the controller of game.
- 61 Chariot of the hostel of timber, or forestry.
- 91 Wagons of the timber of the court of three.
- 94 Wagons of inspector of the court of five, hostel of third grade, knight.

These examples would raise the suggested readings to nearly half of the total number of our hundred here examined.

From the examples now given, it appears that these are certainly ideographic signs, such as lie at the foundation of Egyptian, Sumerian, and Chinese writing; but at so early a stage that the forms can mostly be recognised. The importance of timber and forestry, of canals, of water supply, of transport wagons, and the

hostels needed for trade and government service, all belong to conditions of life which are naturally the same in all ages of India. They open to our view an active world corresponding to the high development of civic life, known by the excellent building and arrangements that are found. These titles, then, help to consolidate the picture of an advanced civilisation now being so fully disclosed by recent research, although not one word of speech is as yet known.

FLINDERS PETRIE.

ANCIENT GAZA.

(Continued from page 9.)

BESIDE the most important of the discoveries, described in the last number, there are various other matters to be noted, which add to the interest of this remarkable site.

In clearing down to the north of the first palace, we uncovered a part of the original revetment which faced over the earth bank of the city of that age (Fig. 1). It is built up of rough blocks of sandstone, and has along the base a gangway about two feet wide paved with stones. The level of this gangway is 1,000 inches above sea. Below these stones there is little more than a foot of loose earth before reaching the marl of the hill at 972 level. The gangway passed about eight feet behind the palace.



FIG. 1.

The revetment held up a bank of sandstone grit, piled as a defensive bank around the city, and crowned on the top with a mud-brick wall. Though that wall has been entirely denuded away, and gone into air, yet its presence is proved by a thick bed of mud washed down over the slope. At about 60 feet south of the revetment we sank a pit to test the ground, and found no building but only piled sandstone grit, with a bed of black mud in it, sloping down from 1,087 to 970 level, and probably further, at 27°. That it was washed-down mud, and not thrown rubbish, was shown by the thin streaks of black and white in it, evidently due to single storms. We must, then, visualise the first palace wrecked and burnt, then lying for centuries open to the weather, while general denudation piled up two or three feet of earth over the ruins of the palace, and storms washed away the fortress wall as a bed of mud sloping down to the palace. Not till the XIIth dynasty did any man care to use the site again.

The plan of the principal palace levels superposed (Fig. 2) shows how each successive builder laid out his walls without any attempt to base them on earlier walls. The first palace was the largest, forming two, or possibly three sides of a great courtyard of which we do not yet know the extent. The building was at least 150 feet wide. The outer walls were six feet thick; the sandstone slabs on edge which bordered the wall (see p. 2) were sunk about a foot into the marl ground, and stood up as a wainscot around the building. The date is probably that of the Syrian invasion, which expelled the old Copper Age culture, and founded the VII-VIIIth dynasties of Egypt, 3100 B.C.

This palace was burnt and ruined. In the courtyard lay five inches of white ashes, over that there was washed down three feet of earth, and at last

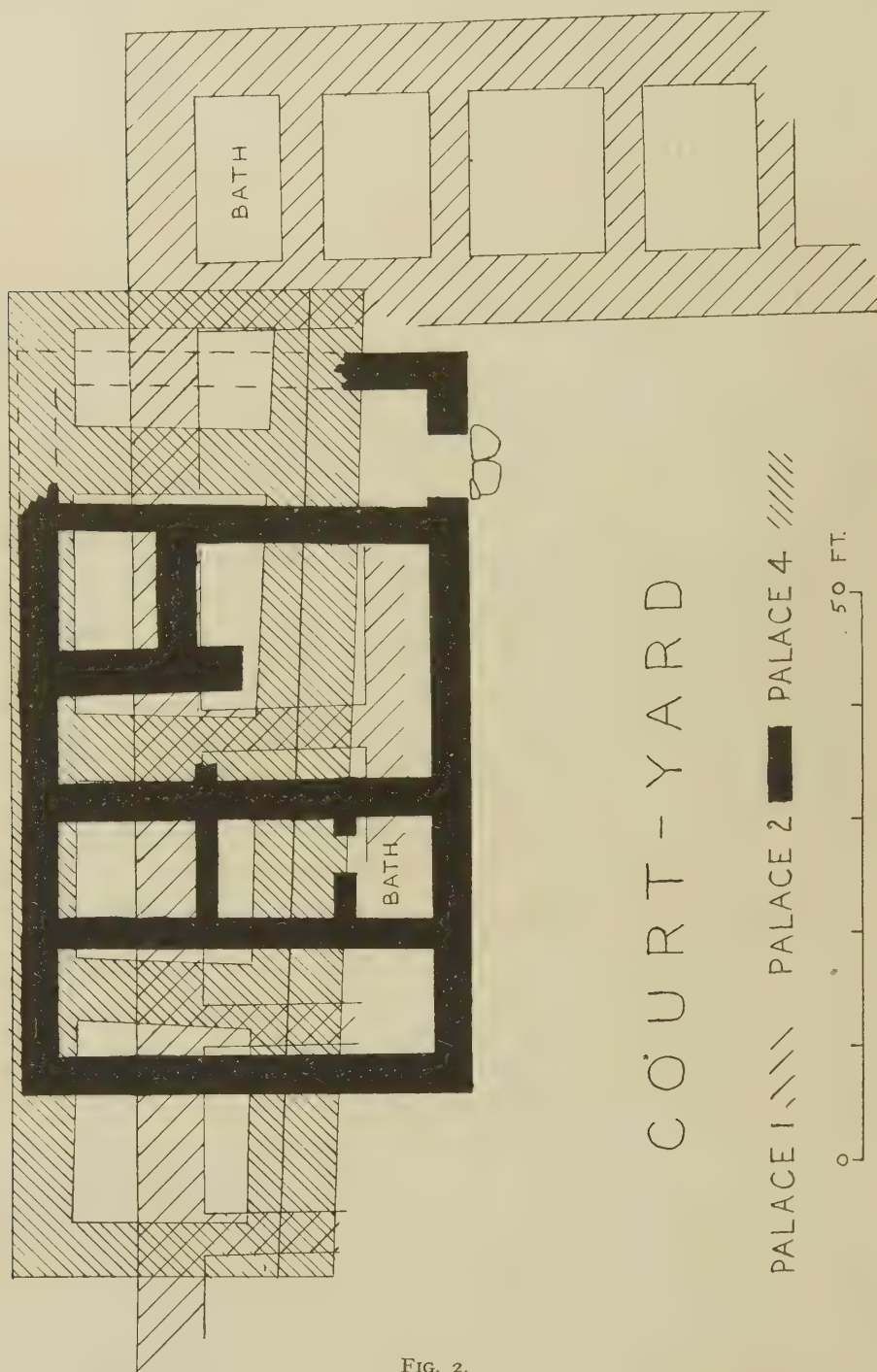


FIG. 2.

on that was founded the second palace. The walls were only half as thick as the earlier building, but beautifully laid with hard yellow clay bricks. This was probably of the XIIth dynasty, 2500 B.C. When the Hyksos arrived at 2375 B.C. they did not feel secure in so slight a building, so they pulled down the three-foot

walls, and laid walls five to eight feet thick—the closely shaded block in the plan. In these they re-used all the older yellow bricks along with dark bricks of their own. Then, about 2100 B.C., the XVIth dynasty Hyksos pulled this about, and raised the floors five feet, shifting and rebuilding the inner walls as here drawn, and having a less robust wall along the front. This was the occasion of the foundation sacrifice, when a horse was killed and thrown into a pit, after



FIG. 3.

removing the shoulders to be eaten, while two other horses were eaten and the bones left scattered singly on the ground. Lastly, in the XVIIIth dynasty, the dis-used palace was found, and built over at a higher level. Only a few rooms remain of this, owing to denudation of the surface. The date is indicated by a jar stamped with the names of Hatshepsut and Tahutmes III, marking the coregency in 1502 B.C. Since that, no builders coveted the site amid the malaria, and only some Arab squatters ever dwelt there.

The bathroom of the first palace is 12 feet 9 by 7 feet 9, paved with hard white plaster (Fig. 3); the floor slopes down to an outer corner for draining, and at one end is a cess pit. In the view, at the right hand, are the white steps going up to the room, and a great jar half sunk in the ground, to supply water. Probably about a quart at a time was baled out, and poured over the body with rubbing. Certainly no immersion bath was used here, nor in the XIIth dynasty. This jar (3100 B.C.) is the earliest of the great jars which were usual about 2400 to 1500 B.C., at Byblos and at Gaza; it proves that the form was not due to the Hyksos. Continuing to the left of the jar is the stone basement of the bathroom wall; abutting on it is the cess pit.

The changes in the style of the daggers is seen in Fig. 4. At the right is one of the flat copper daggers, with only a slight swell up to the axis. Next is a more advanced type with a definite mid-rib, and concave blade on either side of the rib. The butt of it has advanced from the row of rivets along each side, to the definite tang with rivets. All the copper daggers belong to about 3500



FIG. 4.

to 3100 B.C. At the left hand is a triangular dagger of bronze with fine raised veins on it, both along the axis and two on either side of that. This was with the two spear-heads and axe of Mesopotamian type below. These are probably of late Hyksos age, perhaps 1800 B.C. The two daggers with long tangs, in the middle, are of the XVIIth-XVIIIth on the right, and XVIIIth on the left. That these are daggers, and not spear-heads, is shown by the rivetting over of the end of the tangs.

In the last number, the minor goldwork of the great deposit was illustrated (Fig. 6). Here in Fig. 5 are the ten gold armlets, found with the earrings. They were made to form two groups of five, for the two arms, and each group is

numbered from 1 to 5 by small cuts near one end. The upper and lower armlets of each group are rounded on the terminal sides, and flattened on the inner sides, like the three medial armlets. This flattening was made in order to let them lie better together, and is not due to wear, as the weights of the terminals average

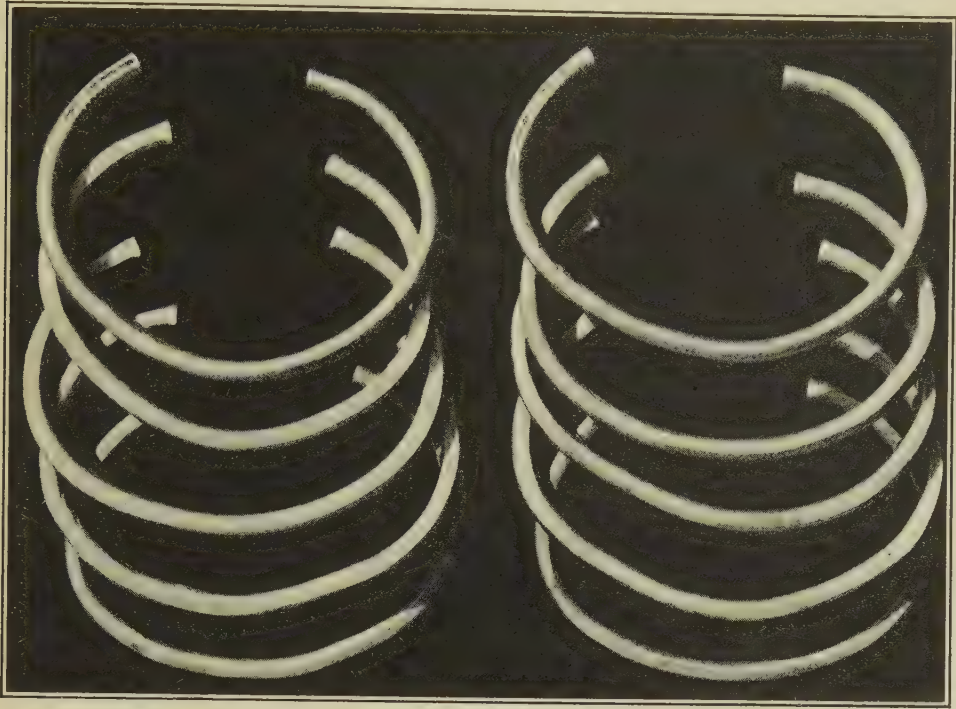


FIG. 5.



FIG. 6.

the same as the medials. The standard is the Egyptian half deben, of the Heliopolitan variety. There is a small group of incised rings around each end of the rod of gold, with slight leafage incisions just below.

This year we have found another specimen of the granular gold work (Fig. 6), of the same type of flying falcon as one which was found last year. In the present example the tail is more developed, but the back is a plain plate instead of duplicating the front. The source of such work is yet quite unknown; the zigzag pattern on a cylinder in Egypt (see *Decor. Pat.* U, VI, 4) suggests Mykenaeen

design, but there is no granular work in the West until the Oriental Etruscans arrived many centuries later.

A large quantity of pottery was found, some of the Copper Age, and also much of it under the Hyksos domination, but mostly of the XVIIIth dynasty



FIG. 7.

in the cemetery. Examples of these are in Fig. 7. The ogee bowl is a late form of the fork-handle type of Cyprus. The spouted vase at the end has a bull's-head mouth. In the second line are three of the Aegean type, as well as a large ogee form of false-neck below.

The prize lying before us in the Tell is the finding of the temples of all these periods. We await donations for this, as the usual support has not come in. These temples are probably not far from the palaces. There we may hope for steles and inscriptions to define exactly the age of the successive levels of building, and there also may be important sculptures and offerings.

FLINDERS PETRIE.

BLUE AND GREEN IN ANCIENT EGYPT.

IN the Near East to-day blue is pre eminently the colour for luck, and blue beads are almost universally hung on the helpless ones of humanity, the babies, and the draught animals—ass or horse; in Egypt a single blue bead is often suspended on a child's forehead from a lock of its hair, as a defence against the Evil Eye, to the attacks of which children are supposed to be specially exposed. Throughout the ages blue is the favoured colour for beads and amulets, in Egypt as in Babylonia and, highly as its prophylactic virtues are still rated, they must have been much more so in the remote times when such beliefs were in their first youth and strength.

This faith in blue is traceable to the earliest prehistoric age of Egypt, the Badarian, when beads are found of turquoise or of steatite glazed in turquoise colour, and so cleverly made that their discoverer, Mr. Guy Brunton, found it often impossible to distinguish, in the field, between the true turquoise and the steatite imitation. Quartz beads were also worn, and must have been greatly valued, considering the tedious difficulty of making them; these two were frequently glazed in the same way, and we may fairly conclude that the origin of the reputation attached to blue is to be found in turquoise.

We are at once reminded that this was the stone precious to the goddess Hathor, who was the Egyptian avatar of the great Mother-goddess, source of fertility and protectress of the dead, and in the late predynastic and early dynastic ages was the paramount deity of the land,¹ the "Queen of the Gods," "Mistress of all," and the prototype of all the city-goddesses who were, in fact, constantly identified with her.² The chosen colour of so great and universal a deity must naturally have had a high value for her worshippers who, by donning it, thought to place themselves safely under her mighty protection.

But why did Hathor thus favour the turquoise blue? As among her many epithets one is "Queen of Heaven," it is a natural inference that her choice was founded on the colour of the sky; her Babylonian counterpart, equally supreme among gods and endowed with as many forms and names, also became Queen of Heaven and, as the astral element was predominant in the religion of Babylon—in cuneiform writing the determinative for "god" was derived from the picture of a star—the predilection for blue is accounted for by Assyriologists as mentioned above. But in the account of Hathor given in my article (*J.E.A.*, vol. xv, pp. 38–40) reasons are given for concluding that she was originally a mother-goddess who became identified with the cow, like her early Babylonian counterpart, that she was adopted by the conquering Falcon Tribe of predynastic Egypt as their great deity and, later, when the solar religion became the official one of the country, she was absorbed into it in various ways and became, very suitably, the "Queen of Heaven." Mr. Sidney Smith, to whom once again I am indebted for explanations of various Assyriological points, believes that ancient Egyptian religion had in reality far more of an astral character than is generally supposed, and is inclined to the opinion that the epithet "Queen of Heaven" may be very primitive in Egypt and Babylonia alike. Yet even if we grant this view with regard to the general character of Egyptian religion, it still seems fairly certain that the heavenly status of Hathor was far from being her earliest one, and that she did not attain it till centuries after the Badarian age, in which

turquoises first appear in Egypt; another kind of connection must therefore be sought between her and them, suitable to her original status as goddess of fertility.

It will be useful to begin with a brief review of the circumstances of the turquoise industry in ancient Egypt. It was imported there from Sinai, where Hathor reigned as supreme diety: we may ask ourselves if the Egyptians, discovering the deposits, brought their own chief goddess to the site, making her its patron, or were there already "sand-dwellers" frequenting the spot and bringing turquoises to Egypt as their successors brought stibium and other precious things to the monarchs of the XIIIth dynasty? ³ The latter solution is far the more probable, for turquoise came to Egypt many centuries before the first record of Egyptian working in Sinai, in the Ist dynasty, under King Semerkhet, ⁴ and it would seem from the warlike monument which he left there that the Egyptians were frequently assaulted by the "sand-dwellers," incensed perhaps at the foreigners' incursion on their monopoly. The cult of the mother-goddess was very widely spread, and was strong in ancient Palestine as in Babylonia, and it is most probable that her aegis extended over the Turquoise district as it did everywhere around; she would have a local form to which the Egyptians applied most naturally the name and attributes of their own form, Hathor, acclaiming her as "Mistress of Sinai." The Egyptian name for the mineral and the district is the same, *Mefkât*, the two being distinguished in writing by their determinatives; as a name, therefore, the term Turquoise-district is preferable, in dealing with ancient Egypt, to the usual one of "Sinai."

At this point we meet with another consideration of the first importance in the fact that the word *mefkât* has the meaning of malachite, a half-precious stone of green colour, composed of carbonate of copper, and that it was confused with turquoise, a confusion comprehensible to anyone who has seen large quantities of Sinaitic turquoises, for they are mostly of a greenish hue, very inferior to fine specimens from Persia. Perhaps there was little distinction made between them as regards colour, for the primitive agricultural man has often singularly small powers to distinguish tints; this is the case with the peasant in modern Egypt, whereas the boatman, having to find his way through the shifting sandbanks of the Nile, has a keen eye for colour, since he depends on it to judge of the set of the current and the depth of water for his navigation. We may note too that the Chinese, with all their ancient civilisation, have only one word for "blue" and "green," *ch'ing*.

Green was the colour primarily connected everywhere with fertility and thus with the mother-goddess. For early man, fertility was the most precious quality, first for the hunters, that by multiplying in numbers they might find strength to sustain a precarious livelihood, and next for tillers of the soil, for the multiplication of their crops. This conception has always been largely centred on trees, the constant emblems of all that is alive and flourishing; everywhere they symbolise fertility and strong life, including the lasting life in the After-world so much desired by ancient Egyptians and Babylonians, as by many another race; they are accordingly planted by such peoples in their burial-grounds, evergreen kinds being naturally preferred. ⁵

In the early Indian culture recently discovered in the old valley of the Indus, the connection between trees and mother-goddess is emphatically shown in a seal displaying a tree growing from her womb. ⁶ In recent times the Indian tree-goddesses have been relegated by later religious systems to a lower rank in the spirit-world, becoming the Yakshis whose grace and charm, as they smile down from their trees in old sculptures, have beguiled many an amateur into

the forests of early Indian art. In ancient Egypt the connection is very plain on several monuments; one of the most appealing pictures that has come down to us is that of the goddess, embowered in her tree, slim and graceful in the nakedness that marks her kind, pouring down the waters of refreshment to the lately-departed soul who stands, all athirst, beneath the boughs, often in the guise of a human-headed bird.⁷ In some of these scenes the goddess bears no name, in others that of Hathor or Nût, the latter being an example of the usurpation by a deity of a later religious system—this time the Solar—of the attributes of an earlier one, best exemplified by Isis, the chief goddess of the Osirian Cycle, who took over the very form of Hathor, the Divine Queen of an earlier dispensation. The chosen tree was the sycomore, so grateful for its shade and fruit in an almost rainless country where trees are naturally rare. In some passages the sacred trees are said to be of *mefkât*, which has been translated as “turquoise,”⁸ but it is surely preferable to adopt the primary meaning “malachite,” which denoted the fresh greenness of the immortal’s tree. In Egypt, as throughout the East, there are still many sacred trees, attached to the burial-places of holy men,⁹ who have taken the place, in the popular estimation, of the ancient local deities. A very interesting link between the *auliya* and the primitive tree-goddesses is found in Palestine where Prof. Canaan, pursuing his studies of Mohammedan saints and sanctuaries, has found that a considerable proportion of the former are women, that the proportion of women enjoying a more than local reputation is double that of men, and that in many places where there are saints of both sexes the woman enjoys the greater popularity.¹⁰ Further, “practically all trees that have as their own name the single name of a tree are thought to be inhabited by female saints . . . who appear on different occasions to different people.” They possess the powers of the holy men, “heal the sick, help the oppressed, guard the property of their neighbours, protect the village from enemies.” It is to be noted that while the *auliya* are nearly all venerable old men with long white beards, the *weliyât*, who often appear in night visions, are usually young maidens—an idea inherited, we may presume, from the youthful grace of the goddess in her tree.¹¹

In modern Egypt the green of plants and flowers still symbolises life as opposed to total extinction in the grave; in some districts the whitewashed graves are decked with painted flowers and vines that the dead man may be refreshed by their sight, as a simple working-man once told me, not without rebuke from an *effendi* bystander, sophisticated with modern education and versed in the eschatology of Islam. Again, a young and intelligent artisan, recounting to me the ceremony, just completed, of the Fortieth Day after his father’s death, added that he was happy in the assurance of his father’s contentment at all that he had done, for him as well as for the family, for the dead man had appeared to him in a vision, “sitting in a green place and content.” Thus the tangible Egyptian paradise, ancient or modern alike, so well expressed in Marvell’s line “a green thought in a green place,” is, in their minds, the same for the dead as for the living. The ancient word for “green,” *wâz*, means also “fresh” as applied to living things and so, figuratively, “alive” and “flourishing”; similarly *mefkât* is connected with ideas of god and heaven, and sometimes signifies even “joy.”¹² The connection between “green” and “prosperity” or “life” is clear in several passages of the *Pyramid Texts*, as in pars. 125, 163, 509, 701 and, especially, 567, which is obscure in parts but contains an illustrative invocation to Nût to “sow; make green . . . (as) thou art green, the king is green, (like) the green plant of the living.” It was doubtless this

sense of livingness in green that caused the Egyptians to represent Osiris as green-faced, as a sign of his yearly resurrection to life from death, to prove himself anew the lord of fertility and the waters that bring it. In early times, at least, they daubed their own faces with green,* as proved by the malachite found on the slate palettes and, in their writings, by such passages as par. 54 of the *Pyramid Texts* :—" Recitation : O Osiris N., paint thyself with this wholesome offering (literally Horus-eye)—two bags of green paint " ; we may infer from the large votive palettes, carved with historical scenes and religious symbols, that the gods, in their images, underwent the same treatment in the course of their daily toilet in their shrines.¹³

Beads and amulets, of frit or steatite, were often covered with green glaze, from very early times, oftener in fact than with blue, partly perhaps because it was an easier colour to produce, not needing the purity of material essential for a pure blue ; though that would tend to enhance the value of blue, it is not to be doubted that the green glaze was credited with great virtues of its own.

How then did blue, instead of green, attain so wide and lasting a reputation for its virtues ? An answer presents itself in the industrial properties of malachite, a copper carbonate which produces through fire the bright blue glaze so valued for all things amuletic ; this blue would be counted as the very essence of the precious green malachite, and its virtue rated higher by reason of its concentration. An analogous case is that of incense which, being the perfumed essence of a special tree, emblem of fertility and life, was deemed as such to be richly endowed with life-giving powers.¹⁴ Two thousand years ago the harvesting of the precious gum in South Arabia, Hadramout, was conducted on ritual lines, with strict tabus of the usual kind ; the very families holding the hereditary right to conduct the harvest were called sacred (see Pliny's *Nat. Hist.*, XII, 30). The connection between malachite and turquoise was probably inferred not only from the process of making the glaze, but also from their being found in close proximity in some spots in Sinai, as I have been informed by Mr. T. A. Rickard, the mining engineer, well known for his researches in early metal-getting ; the minerals are deposited in quite different strata and are of very different composition, turquoise having an alumine base, yet chance has brought them together in places, and the Egyptians, quite ignorant in the matter of composition, might well believe that there was a material connection between them, the more so for the greenish tinge common, as noted above, in the Sinaitic turquoise.

The colour blue received also great honour with the precious lapis lazuli imported to Egypt in predynastic times, but not so far back as the Badarian ; it came from a great distance, the nearest source known being Badakshan, in N.E. Afghanistan, and it must have passed on its way to Egypt through Babylonia, where it has been found in the earliest strata at Ur, recently unearthed by Woolley, and was always valued as the heavenly stone. In Egypt also, perhaps following the Babylonian precedent, it was connected with things divine, such as the hair and bones of gods, and even the gods themselves, for Amun and Min have been given the epithet of " lapis blue " ; in Ptolemaic writings it is identified with Hathor, and the sun is said to make the fields blue with its rays, a phrase which indicates clearly the mental connection between the colours blue and green in respect to earth-fertility, and explains how Amun, at least in his ithyphallic form, and Min came to be described as blue.¹⁵ In Palestine also lazuli was a heavenly stone, translated in the Bible as " sapphire," for it composed the pavement of the Divine Throne ; also the Jews were commanded to insert a blue cord in the fringe of their dresses, *Numbers* xv, 38 ; both cases are probably derivative.

Another parallel case is found in China, with regard to lazuli blue, for the word *louo-ts'ing* denotes a mineral colour, much used in painting from the VIIIth century onwards, ranging from malachite green to lazuli blue (see R. Petrucci, *Les Peintres Chinois*, pp. 44-8).

The generic Egyptian name for blue is *irtyw*, and it is noteworthy that it also signifies a "mourner," probably from the colour worn on dresses at funerals, as Dr. Alan Gardiner has kindly pointed out to me from the coloured copy, by Mrs. N. de G. Davies, of mourners in the tomb of Ramose recently exhibited in the British Museum. The blue is of turquoise tint, whereas in modern Egypt, where blue is still the colour of mourning, it is of a dark tone, probably from the use of the more recently introduced indigo. Thus blue, the symbol derivatively of fertility, became also that of mourning, an apparent contradiction in ideas, but not so in reality, for the mother-goddess, in Egypt as everywhere, was the protectress of the dead;¹⁶ mourners wore the livery of Hathor, her Egyptian avatar, in order that by this manifestation of their devotedness they should ensure her protection of their loved one in the grave.¹⁷

In the Greco-Roman world Isis, who was then the successor of Hathor in her part as mother-goddess, is represented with her head covered with a fringed shawl tied at her breast in a conspicuous knot and, according to Apuleius (*The Golden Ass*, bk. xi), of the deepest lustrous black. In much earlier times Homer (*Il.* xxiv, 93) shows us women donning for mourning a head-veil as darkly coloured as possible, and so it would seem that when the later Greeks figured Isis wearing such a veil they were actuated by the same ideas of the great goddess, in relation to mourners, as were the ancient Egyptians, but by an inverse process clothed her, when adopted as Isis, in their national mourning-dress already consecrated by age-long custom.

The most popular presentment of Isis during the Late Period of Egyptian history was as a mother suckling her infant Horus; its popularity was fully maintained through the Greek and Roman periods, and eventually had a very strong influence on Christianity. This circumstance, while often admitted, has been as often denied because during the first three centuries A.D. adoration of the Virgin Mary does not appear, and was indeed banned by the heads of the Faith; but the mere fact of the ban shows that there was a popular, as opposed to an official, movement to accept her as filling the place in the people's affections that had formerly belonged to Isis; indeed, there are literary indications of this movement in the apocryphal Gospel of James. In the IVth century the conversion of Constantine caused a great influx of pagan converts to the new religion of the Court and, with it, the introduction of many pagan customs; as one of the results, the adoration of the Virgin Mary was openly practised and gained great strength.¹⁸ The attributes of the later Isis were largely transferred to the Virgin Mary, who was honoured under the same title, Queen of Heaven, became the special patroness of sailors and the sea, and had as symbols the star and the crescent moon. In this collocation of attributes we see a mixture of the Egyptian and East Asian forms of the mother-goddess, for the star was the symbol of Ishtar,¹⁹ while the moon appears to derive from the sun-disc worn by Isis, and mistaken by the Greeks for the moon; Isis, too, was the patroness of the great lighthouse of Alexandria, the Pharos, and hence protector of sailors and mistress of the sea—though possibly the idea of the sea may have been fortified by that of Aphrodite, the Greek heiress of Ishtar. Finally, doves are the constant companions of the Virgin, as of the Babylonian mother-goddess.

Now the traditional colour of the Virgin Mary's dress is blue, and immediately suggests a connection with the blue of Hathor and the Chaldaean divine system. There seems to be no evidence that Hathor or the Babylonian mother-goddess, in any of her manifestations, was specifically clothed in blue, likely though that would be; if there were any connection between them and the Virgin in this matter it would be through Eastern Asia, for the dress of Isis in the Greek period was, as we have seen, characterised by the black of mourning. Be that as it may, blue had been for countless generations the emblem of the beloved mother-goddess, and its transference to the Christian personification of a mother's protective love was most natural.

G. D. HORNBLOWER.

REFERENCES.

- ¹ See *Journ. Egypt. Archæol.*, XV (1929), pp. 38-40.
- ² See *Journ. Egypt. Archæol.*, XIII, p. 245.
- ³ See *Beni Hasan*, I, p. 69, and pls. 28 and 31.
- ⁴ See Petrie's *Researches in Sinai*, p. 41, and Fig. 47.
- ⁵ Many references might be made to writings on this subject; it will suffice to mention Frazer's *Golden Bough* (2nd ed.), I, pp. 126-232 (for Egypt, p. 172). For a modern example of tree worship in Egypt, unconnected with a saint, see my article in *Man*, XXX, Feb., p. 17. Prof. Sayce has noted a case of offering to a sacred tree in Upper Egypt; it was surrounded by a ring of stones.
- ⁶ See Sir J. Marshall's *Mohenjo-Daro*, I, pp. 52, 63-6, and pl. XII, 12; another example is adduced where a lotus replaces the tree. Here we seem to have an early manifestation of the idea underlying the symbolism of the lotus. Born in the waters, very striking to the eye, it typified fertility through water, and it is not surprising that in lands of settled agriculture, India or Egypt, where the dependence on water for the very material of human life was well ascertained, the lotus became a symbol of great gods or goddesses, being attached in Egypt at one time to Horus and, in the late period, to Isis.
- ⁷ See Wilkinson, *Ancient Egyptians* (Birch's ed., 1878), I, p. 118; Budge's *Book of the Dead* (1900), I, pp. 204, 208, 211, and II, p. 231; also his *Papyrus of Ani* (Medici ed.), II, pl. 16.
- ⁸ See Budge, *Book of the Dead*, chap. 109, par. 4.
- ⁹ In Arabic *welî*, plural *aulîya*; feminine *welîyeh*, plural *welîyât*.
- ¹⁰ See *Journ. of Palestine Oriental Soc.*, VII (1927), pp. 1-88.
- ¹¹ The worship of the tree-goddess had deep roots in Palestine, and greatly influenced the popular worship of the Jews who were constantly reproached, in the Bible, for setting up "Ashêrîm" at their altars, that is, images of the local goddess in the shape of rough-hewn figures resembling the menhirs of Brittany, the Channel Isles, and elsewhere; they were always made of wood, with the probable object of preserving the connection between the goddess and her tree. One such image was even set up by King Manasseh in the Temple of Jerusalem, and women wove hangings (coverings, lit. *houses*) for it there (2 Kings xxiii, 6 and 7). See, for Phœnicia, Ch. Virolleaud in *Antiquity*, V, No. 21, pp. 406 and 412,

where Ashêrat is an actual goddess's name, and, for Canaan, Hastings' *Enc. of Religion and Ethics*, VI, p. 754; in the latter work (II, p. 286, and VI, p. 678) "Ashêrîm" are interpreted as "poles," a sense retained by several authorities. It matters little which interpretation is accepted, for the "pole" could only refer to some form of tree-worship, closely connected with goddesses. (The Bible—A.V.—translates "groves.")

¹² See *Berlin Dictionary*, II, p. 56, Nos. 8-10 and 14.

* [To disinfect flies which might poison the eye.—ED.]

¹³ See Moret's *Le Rite Journalier du Culte Divin*, p. 199. In later times the use of green cosmetic seems to have been limited to the eyes.

¹⁴ See A. W. Blackman in *Z. A. S.*, Bd. 50 (1912), pp. 69-75. In later times the incense came to be imagined as representing the sweat of the god to whom it was applied, returning to him through its smoke.

¹⁵ See *Berlin Dictionary*, s.v. *hšbd*, III, pp. 324, ff.; and Pinches-Newberry in *J. E. A.*, VII (1921), pp. 196-9.

¹⁶ See *J. E. A.*, XV, pp. 31 f., and 34-6.

¹⁷ Blue is worn for mourning in many parts of W. Africa, probably derived from Egypt, whose influence there is shown in several other respects.

¹⁸ The facts are sufficiently set forth in Hastings' *Enc. Rel. and Ethics*, VIII, pp. 475 ff., sects. 2-4.

¹⁹ The connection of Isis with the star Sirius is not overlooked, but it is only one of her many mythological connections, probably dating from the rise of the solar cult in Egypt, into the circle of which, like Hathor, she had to be received.

RECENT ANALYSES.

MUCH has been done recently on the composition of ancient alloys. The Committee of the British Association on Sumerian Copper has obtained many specimens and received reports of analyses from Prof. Desch. The present statement is in continuation of that given in *Ancient Egypt*, 1929, p. 49.

Babylonia—

From Ur, Ist dynasty or earlier, axe ..	15·0% tin	1·0% nickel.
nail ..	8·8 "	$\frac{1}{4}$ "
Three Sumerian examples ..	No "	Up to 1·0% "
Post-Sumerian ..	14·0% "	
Just over the Flood deposit ..	pure copper	
An early dagger ..	20·0% tin	
A late axe ..	1·6% "	
Khafaji and Susa : 2000 B.C. and before—		
	copper, with traces of "	
El Obeid : Ist dynasty of Babylonia	copper, no "	
Later example ..	8·0% "	
Kish : Bronzes with ..	3·0% to 13·0% "	Traces "
Khorsabad : Iron had no nickel or manganese.		

Mohenjo-Daro—

Bronze with	..	..	..	5.0% to 19.0% tin	Up to 1.5%	..
23 to 33 ft. deep	1 in 4	lead up to	22.0%	..		
1 in 10 had lead,	up to	15.0%. Iron	1 in 6 up to	4%	1 in 4 to	1.9%
Luristan bronzes (E. of Iraq)	..	up to	20.0% tin			
Makran (S. Persia): Bronze	..	up to	2.7%	..	Traces	..
Singbhum (India): Ores have Ni	5%	of the Cu.—				
		ancient plate			3.5%	..
Burma: Axes	..	..	..	up to 2.8% tin		
Zimbabwe: Spearhead	..	..	..	12.3%	..	
Rhodesia: Ores of copper have only traces						
of iron, lead, tin. In ore iron, slag						
Ni.	5.0%	of the Cu.				
Thermi, Lesbos: Copper pure, and also not						
over	..	..	..	..	1.6%	..

Sir Harold Carpenter has developed a method of microscopic study of surface, which avoids injury to the specimens, and has applied this to bronze and iron. A copper axe of XIIth dynasty, with 1.5% tin, had been hard hammered, so that edge was 112 hard (Brinell test), but the body 55 hard.

Iron at University College was examined. Axe about 900 B.C. had about 0.9% carbon at edge, very little elsewhere, edge quenched at 444 hard, and only 62 behind. Axe of 900 B.C. edge, 207 hard. Hoe of 800 B.C. was soft. Chisel 700 B.C., carbonised edge, 0.8% carbon, behind only 0.15% carbon. Knife, bronze handle, 1200 B.C. (?), carbonised to 0.7% carbon, had been heated to 750° C. and air-cooled, 270 hard edge. Double-edged dagger, hard in middle, 140; at edges 100. Sickie with steel blade, Roman, soft iron back, blade carbonised 0.35%, quenched in water, and tempered to 600° C. Dagger, about 1320 B.C., found in Philistine tomb (Bethpelet I, xxi, 90), was of steel with cast bronze handle; proved by snapping across without any trace of bending.

FLINDERS PETRIE.

REVIEWS.

Topographical Bibliography of Ancient Egyptian . . . texts, reliefs, and paintings. III. Memphis. By BERTHA PORTER and ROSALIND MOSS. 254 pp. 1831. 35s. (Clarendon Press.)

This splendid work continues its useful career. The labour of compilation can only be realised by those who have had to collect such information on a single subject. Here the whole field has been searched, and such toil will not have to be repeated till this is out-dated by future generations. Yet there are some omissions. On the plan of Khufu's pyramid there is no reference to the surveys of 1881-2, and the later government survey, nor to Borchardt's work. On the inner details there are similar omissions. The inscription of Pa-seb-khanu is not entered under the Temple of Isis. Similar omissions occur on the Khafra and Menkaura pyramids. The Ibis cemetery west of the pyramids is not mentioned, nor the detail of Campbell's Tomb, noted in 1881, nor the structure of Pepy's pyramid, nor the plan of the south pyramid of Dahshur. Also Khnem-Khufu does not appear in the Index.

Chester Beatty Papyri, No. 1. By ALAN H. GARDINER. 4to. 46 pp., 31 pls. phot., 30 pls. line. 1931. (Privately printed.)

This great roll was written under Rameses V ; it is 10½ feet long and 8½ ins. wide. Excepting a little loss at the first column it is complete, and is in perfect condition.

The first part is an entire mythological text of the contendings of Horus and Seth. It begins with a scene of Horus as a child claiming the kingly office of his deceased father Osiris, and the comments of the various gods on the subject, in the court of the supreme god Ra. He plainly calls Horus and Seth "the two men who these eighty years past have been before the tribunal." Anat and Astarte are to be given to Seth, to compensate for Horus succeeding Osiris. The wrangling of the gods is of a very archaic nature, and Thoth is the only scribe who writes their letters. The whole style seems to go back to but little after the theophagy of the pyramid texts, and may well be of remote prehistoric age.

The second part is of Love-Songs, the most complete examples of such poetry. But the content is far beneath the poetry and love of beauty which belong to the songs already known.

After the encomium on Rameses V there are placed business memoranda. The first is of interest as giving the values of goods, all stated in *deben* of copper as the unit of account. The whole publication is splendidly produced, with faultless collotypes of the papyrus, and transliteration into hieroglyphs facing the hieratic. It will long be a monumental study of such material.

Digging up Biblical History. By J. GARROW DUNCAN. 8vo. 531 pp., 93 pls., 66 figs. 12s. 6d. (S. P. C. K.)

This work serves as a general conspectus of what is physically known down to 1930 of civilisation in Palestine. As such it will be useful, even apart from the point of view adopted in each case. The caves are fully described, and the uses of them for living, storage, or burial are discussed at length. The varieties of pottery are carefully distinguished. The ugly baggy pots of the cave period were followed by a totally different type of shapely vases with a flat base. In the plate given, it is implied that the change was due to the Copper Age, and it is associated with wavy ledge-handles, as in Egypt. The change of ideas and of production is so essential in nature that it implies a different race. These features are associated with combing of the surface and burnishing, which are distinguished by the author from "cave-dweller ware"; they "were, however, in practice early enough for the cave-dweller to use them, but they belong to the immigrant Amorite civilisation." This is a sound point of view, only for "Amorite" we should use "Copper Age." The racial names must be kept out of use until we know how many changes there were. By the by, the term "Early Bronze" should be utterly tabooed; it was a Copper Age, a long period in which malleable copper, with slight mixture of hardening alloys, was the regular metal, and determined the forms and treatment employed.

It is unfortunate that so complete a review of the subject was a little too early to utilise the more definite distinctions which are now available. We now know that the Copper Age began about S.D. 60 (B.C. 5000?) in Palestine, exterminating the Neolithic folk; and it ended by the incoming of the Bronze users of North Syria, who formed the VIIth–VIIIth dynasties of Egypt, about 3100 B.C., and exterminated the Copper folk. Each change was ushered in by a few fore-runners, but the racial change is shown by the loss of the arts and types which were extinguished. Further we see that the Bronze users decayed soon, and were superseded by Egyptians of the XIIth dynasty, who drew their character and ability from the south. The use of dates B.C. is better avoided unless some single system is followed, otherwise they become contradictory.

The races involved in these changes of civilisation must not be labelled rashly. Hittites and Amorites are suggested here as joint forebears of the Hyksos. But neither of these peoples are known to have used the horse, which came in with the Hyksos. Again, the characteristic dress ornament of the Hyksos was the toggle pin, with a hole through the middle. Exactly this form, and its ribbed and spiral ornaments, belongs to the Caucasus. Yet the Hittites came from Thrace and the Amorites were Semitic. The toggle-pin users were of neither of these origins.

There are frequent references to "glazing used in Egypt," "Egyptian fused glazing," "glazed dark yellow slip," for large pottery; yet glazing was only applied to white-paste faience on a small scale; not till Greek times do we find large examples of glazed vases. Cypriote pottery is said to begin to appear about 1200 B.C.; but we now know Anatolian painted pottery from 3000 and Cypriote imitations by 2400 B.C.

After the outlines of the successive periods there is a valuable summary of the discoveries site by site, with plans of different constructions, through the pre-Israelite age. The remains of the Hebrew age from the exodus to the exile are carefully dealt with, detailing the various fortifications. The accounts of the Samaria discoveries are very acceptable, as no such description has yet appeared in England. The first volume has the blessing of a separate index.

The second volume opens with the domestic building. It should be said that the bronze bedstead (p. 10) is akin to Assyrian work, and the plate is inverted. The religion and cult objects are fully described. The usual type of temple, with a wide forecourt having three chambers along the back, is the early form in Egypt (see *Hierakonpolis* II and *Abydos* II, L.). The scanty inscriptions yield all that is possible, and the burial customs are fully discussed with detail of evidence for cremation and cadaver burial together. The periods are carefully distinguished, and the types of burial in each period. The child sacrifice may be compared with that of a foundation deposit of a fortress (*Hyksos and Isr. Cit.* 29). The *kokim*, tunnels for burial, are dated as early as 550 B.C.

The chapter on work in stone and metals contains a full discussion of the complex rock tunnels of the Gihon spring. For the weights a complete list, in order of the units, is much needed. We hope that another edition will give scope for revision to include the latest results of excavation.

Egyptian Antiquities in the Nile Valley. By JAMES BAIKIE. 8vo. 874 pp., 31 pls., 107 maps and plans. 1932. 21s. (Methuen.)

This is an enlarged edition of Weigall's Guide of 1910, brought up to date regarding discoveries, and extended to the Delta. The original was a sound piece of work, and this successfully builds in the fresh material, and greatly amplifies the illustrations. It is emphatically the needful book for the intelligent tourist, and the scholar has nothing better without carrying a library. The late Dr. Baikie had the gift of assimilating exact knowledge and giving it out in doses fit for the public use, and in recent years had done valuable work in thus educating all willing hearers. The accuracy of this volume has been checked over by passing through the hands of the present head of the Cairo Museum, our old friend Mr. Engelbach.

Setting aside for a time the local connections, the account deals for over fifty pages with a tour of the Cairo Museum, to tell the tourist what he should see and how to understand it. This humanising of a museum will double the number of those who care to remember it.

JOURNALS.

PALESTINE DEPARTMENT OF ANTIQUITIES. QUARTERLY, I, 2.

Rock-cut tomb at Nazareth.—This is fairly dated by the (yellow?) glass pendant with lion; such stamps are of mid-third century. The lamps are consistent with this date.

A hoard of Byzantine coins.—These are from 500–612 A.D. Usual type.

The obverse type in the Second Revolt.—This seems to represent a tetrastyle temple, with the curve-topped ark inside. It is hard to see any resemblance to the Tabernacle, which is suggested.

Coins in the Palestine Museum.—These are local varieties, unpublished or little known. From Alexander Bala to Trajan Decius.

A mediæval Arabic description of the Haram at Jerusalem.—(Continued.)

Bibliography of Excavations.

The name of Khan el Ahmar, Beisan.

Ancient street levels in the Tyropoion Valley.—A fragment of the interminable complexity of the many buildings in Jerusalem.

QUARTERLY, I, 3.

This number deals solely with the Roman and mediæval periods—a second-century grave, a Byzantine memorial of the builder of the church at Michmash, Roman levels in the Tyropoion valley, and mainly an elaborate account of the Crusader's castle at Atlit. Three more plates of Roman coins, and more of the Bibliography of Excavations complete this number. The historical problems of early times do not seem to attract notice.

QUARTERLY, I, 4.

Mosaic pavements at 'Ein el Fawwār.—The spring here had a small chapel adjacent, with a pattern of red sprigs.

A portrait of Vitellius in rock crystal.—This is an old acquisition of the Jerusalem Museum. There is no proof that it is an imperial portrait, and for a reign of eight months it is strange to find so elaborate a work as a crystal carving. It is passably good for a material so baffling to art.

An inscribed epitaph from Gaza.—This is of the third century A.D., of one Charmandas, whose children "had received golden favours from the Egyptian kings whose riches were established of old." This seems impossible under the Emperors, and it implies a Ptolemaic date.

Excavations in Palestine in 1932.—This summarises various sites. Irq el Ahmar rock-shelter, with deposits from Bronze Age to Aurignacian. Khirbet et Tubeiqa, the site of Beth-zur, was occupied from the Hyksos to the Maccabees. The important remains are inscribed weights: the *pym* of 111 grains, the *beqa* of 90, and two *nesef*, 147 and 151 grains; all of these are about 10 grains too light for the standards; they have been falsified, or else heavily cleaned after discovery.

Ramát Rahél, a rock-tomb of Hellenistic date. Wady el Maghara, three Mesolithic caves. Megiddo; the great rock passage down to the spring at the foot of the hill was cleared out. At the outer mouth of it was the skeleton of the guard with a great bronze mace head. At the opposite foot of the hill are many Bronze Age tombs, from which 48 skulls were preserved.

Bibliography of Excavations, Jerusalem.—With a detailed map.

JOURNAL OF THE SOCIETY OF ORIENTAL RESEARCH, November, 1931.

M. Fossey proposes a methodical comparison of cuneiform texts that are scattered in different museums, and may belong together. This would entail a general catalogue arranged by names, a vast affair.

Mr. Campbell Thompson deals with Assyrian prescriptions for plasters.

The Rev. J. R. Towers edits the great Aten hymn in modern rhymed metre, though metrical versions of the psalms are not now in favour.

This journal gives valuable notes of the works on Assyria and the Old Testament, which are not supplied by any other English journal.

Magical Texts from a Bilingual Papyrus. By H. I. BELL, A. D. NOCK, and HERBERT THOMPSON. 54 pp., 3 pls. 1932. (British Academy, Milford). 7s. 6d.—This papyrus, from late in the third century, is written in Demotic and Greek. The charms prescribed are for a dream, for finding a thief, and mostly erotic. There are four pages of Demotic and two of Greek, with a commentary of thirty pages. The latter is by Mr. Nock, and touches on a vast number of obscure beliefs and customs. The old puzzle of Abrasax is not solved, though mostly referring to a late form of Horus or Shed. The magical value of the lizard is discussed at length, but no distinction is traced between the little bright lizards and the larger sizes which look uncanny, up to the big *waran* three feet long. This papyrus gives a view of the growth of magic, still in touch with old Egyptian mythology, but on the road to the wild gabble of the dark ages.

Seminarium Kondakovianum. 1931.

BELAIEW, N. T.—*The Daric and the Zolotnik.*—Col. Belaiew here continues his research on the descent of Russian weights from the Babylonian. Thus Babylonian high shekel 2×65.80 ; Solonic, 65.82; Lysimachus gold, 65.85; Russian modern, 65.82. The middle shekel of 129.2 had a talent of 930,000, and this was divided into 100 minas of 9,300, and further into 16 taels of 582 in China and India, brought also west by Etruscans. Col. Belaiew traces further steps in the mediaeval descent of weights.

BULLETIN DE L'INSTITUT FRANÇAIS D'ARCHÉOLOGIE ORIENTALE. XXIV (recently completed), fasc. 1, 2.

La Belle Fête de la Vallée. By G. FOUCART. 209 pp., 48 pls. 1924, 1930.

This forms a substantial volume but, beyond division into three chapters, there is no index or contents. It opens with the remark that the Greeks in Egypt were most struck by the festival appearances of the statues of the gods, carried out to visit all the sanctuaries and cemeteries. Beginning with the Greek period, the functions of choachytes and taricheutes are discussed. The older *kebt*, or purifying priest, was the origin of the choachyte who sprinkled the way for the procession. The great festival was that of "the Valley," *ant*, beyond the Memnonia.

The great boat of Amen, the "Userhat," is described; it appears in scenes

from the XVIIIth to the XXIVth dynasty, and there is even a fragment known as early as the XIth. It was made of *ash* wood from Rutennu, plated with silver and gold; the shrine on it was of electrum. In the Nile procession it was led by the ship of the king with sixty rowers. The sacred boat under Ramessu III was 120 cubits, 223 feet long. The principal gods are all figured as attending in the procession. The various representations of the portable sacred boat are in a series of three: (1) the appearing from the temple; (2) the visit to the east; (3) the visit to the west, in conformity with the united functions of Amen and Ra.

The third chapter is on the "precursors of the sun." These are in the scenes of the tombs at Deir el Medineh: the long body of the goddess Nut is in the midst of the roof, and along each side of the vault is the stream of Ocean. The oldest paintings have the Sycomore of Life above the head of the goddess; later the goddess is identified with the Tree Spirit, and provides for the dead from amid the tree. Other sacred trees are also shown: terebinth, tamarisk, fig, dūm palm, and olive.

The Heliopolitan myths of mothers of the sun gave place to the Hermopolitan refinement of the myths, so that goddesses were sisters or daughters of Ra. Finally the Sun-god absorbed all varied worships in the figure of the triumphant Sun, creator and father of gods and men. This maze of incoherent mythology of later times can never be grasped, however, until we can arrange each element in order of time and locality.

TOME XXX. MÉLANGES VICTOR LORET. 1930.

In the two parts of this volume (591 pp.) already issued two years ago, there are 42 plates due, but these are to follow in another part not yet issued.

P. PERDRIZET. *Le jeu Alexandrin de l'icosaèdre*.—This describes fourteen examples of polyhedra used in games. Four others are already published in *Objects of Daily Life*. The most elaborate is owned by King Fuad, bearing twenty faces, with numbers from 1 to 48, omitting several ciphers. Each face has the nick-name by which the throw was known. The source of several is obvious; 6 is "the day before the Sabbath," 8 is "polypus," 9 is "muses," 25 is "ephebos," perhaps an age fixed in Egypt; the highest throw—48—is Soter, *i.e.*, Ptolemy I, and the half of it—24—is Berenike. Eight other specimens have similar numbers. Others with twenty faces are marked 1 to 30, 1 to 400.

WESSELY, C. *Synopsis Florae Magicae*.—Names of 134 plants used in charms, with references.

JÉQUIER, G. *Une coiffure divine*.—This is the conical fluted head-dress, such as appears on the amulet of a Syrian god (*Anc. Eg.*, 1931, p. 75). African connections with a religious dance are noted, and we may add the figures in QUIBELL *Ramesseum IX*, and El Kab.

WEILL, J. D. *Papyrus Arabes d'Edfou*.—Letters of about 700 A.D. concerning a cargo of fancy merchandise.

BOREUX, C. *Les pseudo-stèles c. 16, c. 17 et c. 18 du Louvre*.—These are probably parts of the sides of a model tomb, substitute for a built cenotaph. They belong to a Senusert of the XIIth dynasty.

COMBE, E. *Cinq cuivres Musulmans*.—These objects, dated from 1220 to 1428 A.D., bear inscriptions of the makers and owners. An astrolabe bears the names of three astronomers known as authors.

VITELLI, G. *Archivio di uno Strategos*.—Of the reign of Hadrian.

BAILLET, J. *L'anthropophagie dans l'Égypte primitive*.—Diodorus states that Osiris converted men to a corn diet. This may be confirmed by many references to eating human flesh; also Horus gave his enemies to be eaten by the gods. The pyramid texts refer to eating the gods. The instances of dismemberment, and apparent gnawing, on bones of prehistoric times at Naqada, bear out a ceremonial anthropophagy, at an age when it may have survived in order to honour the ancestors by uniting with their flesh, an idea still prevalent in Africa.

CAPART, J. *Un fragment de bas-relief au British Museum*.—This bears a scene with boys, one dressed as Bes (?). This may be part of a festival at circumcision.

PAUTY, E. *Une porte en bois sculpté, provenant de Bagdad*.—This is of early Arab work, under Persian influence.

FAIDER, P. *Sénèque en Égypte*.—The interest that Seneca expresses about Egypt points to his having property there. Owing to his influence with Nero, the prefecture was given to his friend Balbillus. Another prefect was his maternal uncle, and from allusions in his writings it seems probable that he had visited Egypt.

LEFEBVRE, G. *La statue "Guérisseuse du Louvre"*.—This figure holds a stele of Horus on the crocodiles. The text of this is largely the same as on the Zedher stele of Cairo.

BLACKMAN, A. M. *Inscription of Herwerre at Serabit*.—This text of the hot weather expedition is here edited and translated.

SPIEGELBERG, W. *Der aegypterkönig Proteus*.—This paper would identify the mysterious Proteus with the Nile-god statues.

GAUTHIER-LAURENT.—*Objets égyptiens du musée de Langres*.—(1) A stele of Sebek-dudu born of Hapy, and wife Senusert born of Nefermaot, with a long family. (2) A relief of offerings in early XVIII, no name. (3) Label of wood of Mesmes, early XXI. (4) Four canopies of Ankh-hor-py-khred.

GRIFFITH, F. LL. *Four granite stands at Philae*.—One is of Ptolemy Euergetes I and Berenike, another was probably a fellow stand. A third is of Taharqa, naming the region as Taqemps=Tachompso. The fourth was to bear three statues of Philometor, Cleopatra II, and their son, as inscribed in demotic.

MALLON, A. *L'origine égyptienne de l'alphabet Phénicien*.—This paper elaborates an hieratic version of De Rouge's theory. The hieratic ranges of signs gives much more elasticity of choice. Near comparisons are reached between the Ahiram alphabet and forms of hieratic. The ulterior question is the distance between these forms of Ahiram and the European alphabets, which are much closer to the early signary of foreigners in Egypt. We still need many more early inscriptions to clear up the various links that seem possible.

HENNE, H. *Sur un édit d'Hadrien*.—This is a revision of earlier transcripts.

GARDINER, A. H. *Two hieroglyphic signs*.—These are the loop of rope (*shes*) and the tied-up bag (*seshr*). The early examples of form are quoted, and the usage phonetically in each age, with full discussion of words in which either sign is used.

NAGEL, G. *Représentations de chevaux . . . du Nouvel Empire*.—These horses are of the thick-necked, short type, piebald black and red on white. They are drawn with much free spirit, on the way to Ramesside decadence

GIRARD, ST. PAUL. *Un fragment de la vie de St. Arsène*.—This portion describes the visit of Arsenius to Theodosius, who commits his sons, Honorius and Arcadius, to the tuition of the Saint.

PICARD, CH. *Les influences étrangères au tombeau de Petosiris*.—The foreign influences, whether Persian or Greek, are discussed. M. Montet has proposed that the changes from Egyptian style were due to Persian art, and this is strongly contested by M. Picard. Before settling this we need to revalue the sources of Greek art. How much that we recognise as Greek was really due to the superior material civilisation of Persia? This question is abhorrent to the Hellenist, but it must be seriously faced before we label work as Greek or Persian. The "satrap" sarcophagus in Constantinople is a cardinal example of what is due to Persia. There we see the same feeling for massive, draped forms in slow motion, like the work of Petosiris, but foreign to Greece. The full draping of most of the male figures is in Persian taste. The specific details on which M. Picard relies for Greek evidence may be due to Persian influence in Greece. After 480 B.C. Greece was saturated with Persian art-treasures and Persian slaves, left behind in the flight of Xerxes, and after the wreck of the 300,000 men with Mardonius, to say nothing of the innumerable camp-followers and baggage left along the route. Thus the presence of links with Greece proves little compared with the resemblance to the spirit of Persian art which is seen in the character of the design and dress.

BUCHER, P. "*Les textes . . . du ce qu'il y a dans la Douat*."—Here the text of the close of the first three hours is compared, from the tombs of Tahutmes III, Amenhetep II, and Sety I. These were based on a manuscript, which was defective, but best copied in the middle example, noting lacunae. The versions are set out in parallel lines for comparison.

GAILLARD, C. *Représentations du Martin-pêcheur pie*.—The kingfisher hovering and diving is in Egypt the most beautiful sight of animal life. Here the swallow and kingfisher are described, and their representations on the monuments compared.

WIET, G. *Inscription de Malik Zahir Gazi à Latakieh*.—This is mainly occupied with the history of this son of Saladin.

SCHEIL, V. *Inscription de Darius à Suez*.—This reports various fragments.

CHASSINAT, E. *Le Mar du roi Menibré à Edfou*.—The *mar* was a station where a statue of a god was exposed for adoration. In the text naming it, the name of a king is given, which has been read Ra-men-kheper, but which is stated to be more truly Ra-men-ab. This name is familiar on scarabs of about the XXVth dynasty, which could not possibly be dated to the Middle Kingdom. It is fruitless therefore to dally with Menabra in that connection. XXX, 11^e partie.

KEIMER, L. *Remarques sur la huppe*.—Two bronze figures represent Horus holding a hoopoe. The knowledge of the hoopoe, figures of it in painting and sculpture, and even in modern tatuing, are given, with the references in classical authors.

LAUER, J. P. *Monuments du roi Zoser*.—This outline of the whole of the discoveries is most valuable as the opinion of the man who knows them most intimately, and has reflected most carefully. The princesses whose tombs adjoin the pyramid may have been the daughters of Zoser, or wives descended from his predecessors. After noting several indications, the conclusion is that these so-called tombs were the chapels of the *sed-heb* of the south and north. The bar-holes cut in the capitals of the columns are taken as being for holders of the masts set up before the chapel, as indicated on the hieroglyphs of such shrines; or else for supports of ensigns, such as the falcon or jackal. The temple of the *sed-heb* is then discussed, and the separation of the daily cult from the festival. The arrangement of the pyramid temples is described; also the suggested course of the *sed-heb* ceremony in the special enclosure for it. No reference to the *sed-heb* chapels of Sonkh-ka-ra or Senusert III is given, but the change from a site near the burial to a choice of the highest ground implies an alteration of beliefs.

TILL, W. G. *Die Vokalisation des Fayyumischen*.—This traces the dialectic variations of many words in each of the different regions.

TRESSON, P. *La stèle de Naples*.—This stele was found in the temple of Isis at Pompei. It was an adoration of Hershefi by Sam-taui-taf-nakht, son of Zed-sam-taui-auf-onkh. The historic references to the defeat of Egypt by an Asiatic, and the later victory by the Greeks, and return of the priestly family to Heracleopolis, are attributed to the time of Nabonidus II and Alexander's defeat of Persia. Yet it is certain that this official lived under Psamtek I, as his statue has that name (*Mon. Div.*, 34 g); also observe the names of Tafnekht and of Pankhy (*Stud. Hist.*, iii, 234, and Griffith, *Rylands Papyri*, iii, 73).

BEAUVÉRIE, M. A. *Quelques fruits de l'ancienne Égypte*.—The *Hyphaena*, *Juniperus*, and *Phoenix* described do not add to the list in *Descriptive Sociology*.

SCHUBART, W. *Die Boule von Alexandria*.—This discusses the newly found papyrus on the constitution of Alexandria.

COLLART, P. *Quelques exercices scolaires*.—These are a school papyrus and two ostraka.

CLÈRE, J. J. *Un passage de la stèle du général Antef*.—A long grammatical study results in rendering *hšb-t* as the judgment of the person, or an episode in the judgment, and the hall in which it was given. It is the "reckoning-up" of the man altogether. The whole passage is rendered "May the deceased arrive at the divine judgment-seat, at the place of the gods; that his *ka* be with him, and his offerings before him; that his voice be known as exact, that he answer that of which he is accused, and that he be acquitted by his reply."

(To be continued.)

NOTES AND NEWS.

His Majesty the King of the Belgians has been graciously pleased to honour English Egyptology by conferring the insignia of Officer of the Order of Leopold upon Sir Flinders Petrie.

With much regret we learn of the death of Mr. Leonard Loat, who worked with the Egyptian Research Account at Gurob in 1905. His discovery there was a cemetery of fish, some of great size, which followed on his five years' survey of Nile fishes for the Egyptian Government, up to the Equatorial Lakes. He also did much zoological exploration in tropical lands.

At Megiddo a most remarkable clearing has been carried out by Mr. Guy. A wide hollow full of rubbish was followed out, and found to extend through all the strata of ruins down to the rock, forming an immense crater, with a stairway down the side. At the rock it becomes a vertical, square shaft, about sixty feet deep, and twenty feet square. From this a sloping tunnel leads down to a spring which rises at the foot of the hill. Thus the internal water supply was assured for the city, and the long, steep, slippery stairway speaks painfully of the duties of the "drawers of water" among the conquered Canaanites. The spring below was cut off from outer access by walking across it; only a narrow door was allowed, and beside it was found the skeleton of the doorkeeper, with a large mace-head of bronze.

BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT.

The Exhibition of last season's discoveries will be held at University College, Gower Street, as usual, from July 11th till August 6th, hours 10 to 5, and in the evenings of July 15th and 25th, hours 6 to 7.30. All the principal objects described in the articles on Gaza in this journal will be on view there.

HOSPITALS A NECESSITY, ARCHAEOLOGY A HOBBY,

we hear on all sides. Please therefore help us to cope with our heavy hospital bill (£75) for workmen who excavated our palaces of Gaza. Also we dug a canal $2\frac{1}{2}$ miles long, at a cost of £100, to free the place from malaria. After 4,000 years' abandonment it is again a promised land. Help us to meet these charges for health of workers, and improvement of district.

GAZA PALACE AND TEMPLE.

To keep a boy or girl						£	s.	d.
digging for a week	..	..	..	..	..		6	0
for a month	..	..	..	..	..	1	5	0
for the season	..	..	..	..	..	7	10	0
To keep a workman								
digging for a week	..	..	..	..	..		10	0
for a month	..	..	..	..	..	2	5	0
for the season	..	..	..	..	..	12	0	0

Will you not dig by proxy and help to make these discoveries?